Dissecting Training: Building Toward Competence in Emergency Preparedness

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Cutting Carefully: Defining Our Terms

- What is “competency”?
- What are competency sets?
- Are competency models different from competency sets?

Cutting Carefully: Defining Our Terms

- What's the difference between capacity and competency?
- What's an "indicator" and what do they have to do with competencies?

What is Competency?

- "A **simultaneous integration** of the knowledge, skills, attitudes required for performance in a **designated role and setting**"

Dorothy del Bueno, 1978

What is Competency?

"A cluster of related knowledge, skills & attitudes that affect a major part of one's job (a role or responsibility) that correlates with performance on the job, **can be measured against well-accepted standards, and that can be improved** via training and development".

Lucia & Lepsinger, 1999

Common Elements

- Comprised of knowledge, skill and ability elements
- Simultaneous integration
- Linked to performance
- In a specific role and setting

Competency Measurement/Evaluation

- True competency can only be measured in context
- Example:
  - Test out on CPR vs perform CPR
  - Successfully demonstrate learning in a classroom vs perform what the class was designed to teach in an actual emergency in a functional role

What are Competency Sets?

- Developed by groups of professionals
- Clusters of knowledge, abilities, skills, and attitudes (KSAs) statements
- Describe what practitioners in that profession are able to do

Foundational Competencies

- Core Public Health Practice
  - Council on Linkages Between Academia and Practice (COL)
  - What public health professionals should be able to know, do; the attitude they bring to their work
    - Divided into 8 “domains”
    - 64 competencies and 4 attitudes (68)

COUNCIL ON LINKAGES
BETWEEN ACADEMIA AND
PUBLIC HEALTH PRACTICE

...bringing together public health education, science, and practice

Core Competencies for Public Health Professionals

April 2001

A collaborative activity of:

PHF Public Health Foundation
Washington, DC

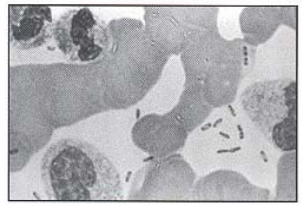
U.S. Department of Health and Human Services
HRSA
Health Resources and Services Administration

Core Competency Domains

- Analytic/Assessment Skills
- Policy Development & Program Planning Skills
- Communication Skills
- Cultural Competency Skills
- Community Dimensions of Practice
- Basic Public Health Skills
- Financial Planning & Management Skills
- Leadership & Systems Thinking Skills

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

Bioterrorism & Emergency Readiness



COMPETENCIES FOR ALL PUBLIC HEALTH WORKERS

PUBLIC HEALTH READY

“THE” Bioterrorism/Emergency Readiness Competencies

- CDC (aka Gebbie, Columbia)
- Developed for use by all Public Health professionals who are involved in planning, responding, and/or recovering from an emergency
- Cross-cutting competencies (1-9)
- Role specific competencies

Public Health Laboratory Staff

- Detailed articulation of the cross-cutting competencies as they relate to Laboratory Staff

- Identify additional competencies needed to be performed by Laboratory Staff in Preparedness/Planning, Response/Mitigation and Recovery/Evaluation activities

Other Competency Sets

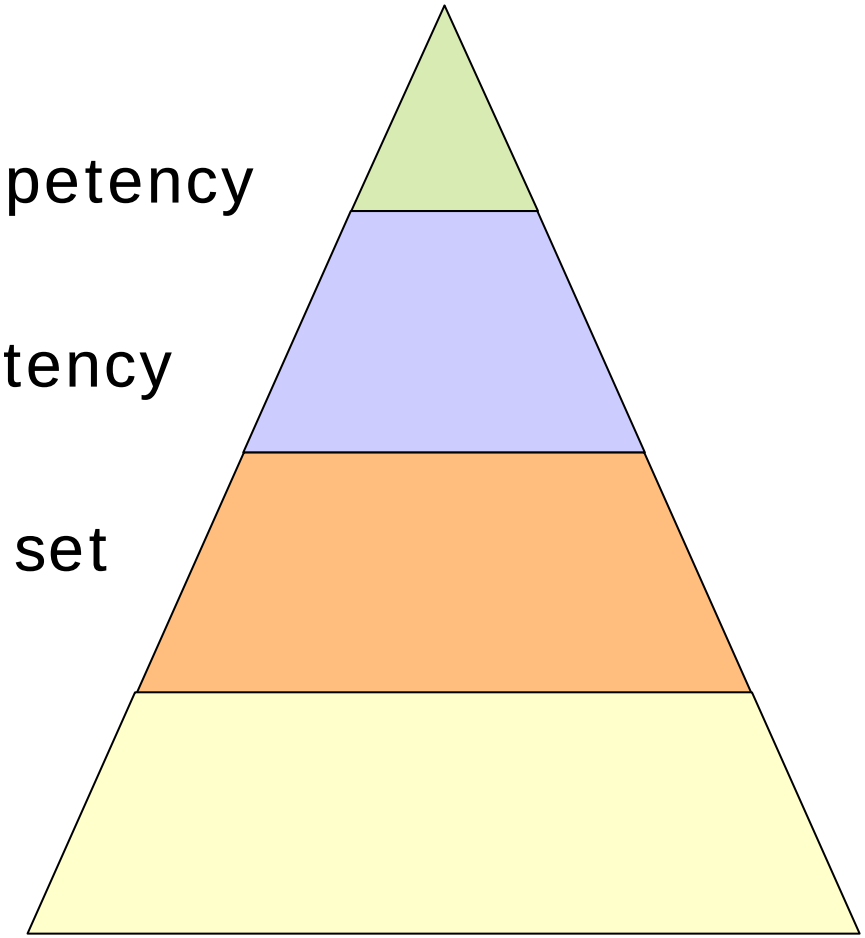
- Well over 100 specialized competency sets and growing
- American Society for Clinical Laboratory Science: “Supports the concept of career mobility (ladder) from Level I to Levels II and III which includes utilization of validated competency-based credentialing examinations to determine competency of personnel at all levels of responsibility”.
  - http://www.ascls.org

What are Competency Models?

- A “meeting” of Human Resources and Education/Training theory and practices
- Groupings of competency sets
- Targeted to a specific role
- Linked to job design, job tasks and role requirements
- Linked to evaluation measures/performance appraisal

Building Competency

- More specialty competency sets
- Lab Science competency sets
- BT/ER competency set
- Core Public Health Competency set



Example: Public Health Laboratory Staff Manager

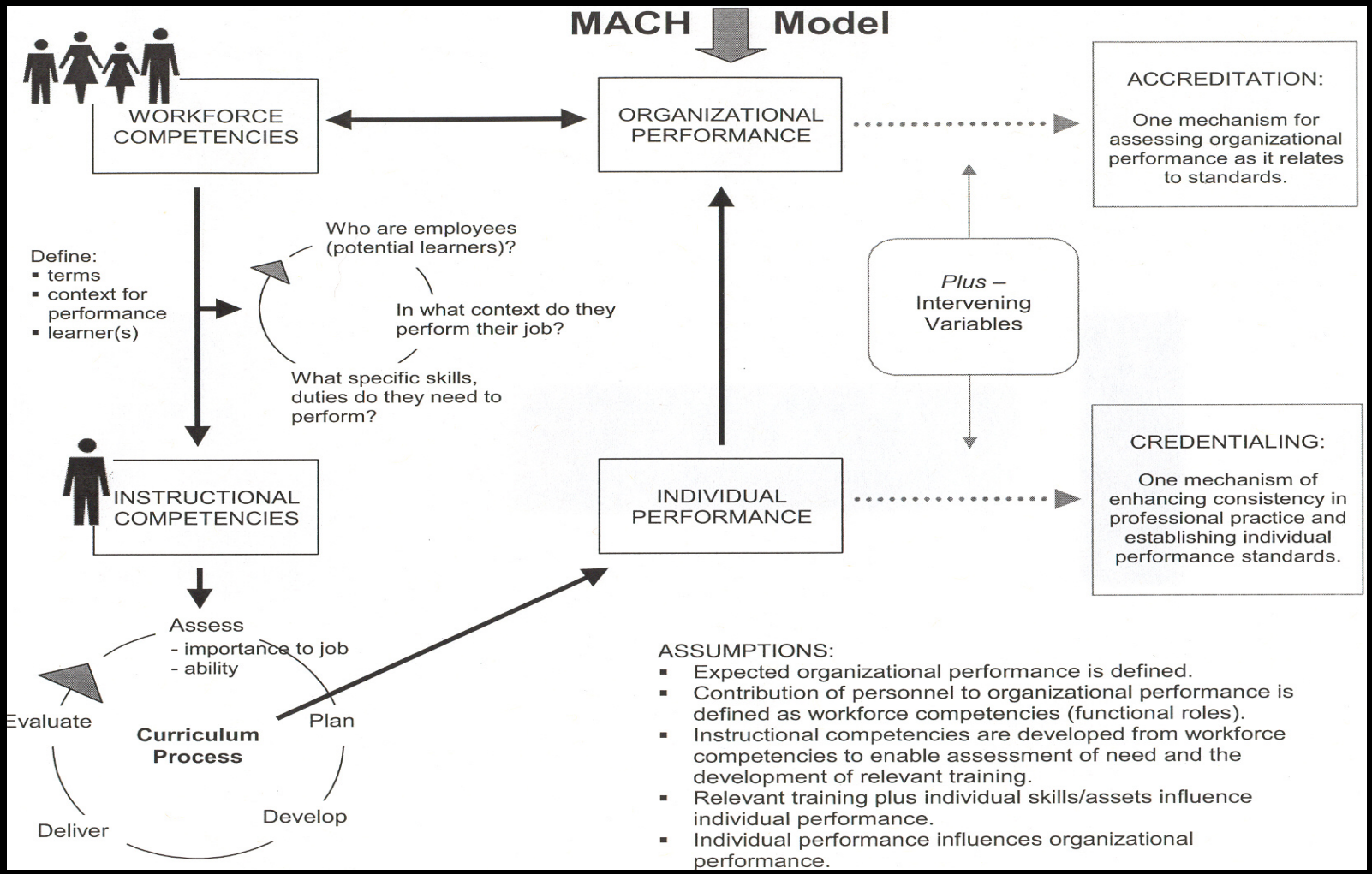
- Core Public Health Competency Set
  - Foundational Public Health
- BT/ER Competency Set: Cross-cutting competencies
  - Bioterrorism/Emergency Readiness
- Laboratory Science Competency Set
  - BT/ER and Professional Specific
- Core Competencies for Supervisors, Managers and Executives
  - Fiscal Management, Human Resource Management

What is Capacity?

- Ability of an organization to perform in a specific need
- Dimensions of capacity:
  - Human capital
  - Physical capital
  - Economic capital
  - Social capital
  - Cultural capital
  - Knowledge, skills and attitudes (KSAs)

Capacity & Competency: Not the Same Thing

- Individual competence contributes to capacity but is not “capacity”
- Individual performance is developed through training that reflects competencies
- Competencies are comprised of KSAs



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Pinning the Specimen: Instructional Objectives

- Provide focus
- Reflect learning needs assessment
- Convey instructional intent
- Target evaluation measures
- As a set, reflect what is accepted as evidence that the overall purpose or goal is achieved by the learner

Level of Specificity

- General Learning Objectives versus Specific Instructional Objectives
- Purpose/Goal vs. Measurable Behavior

Domains of Learning

- Cognitive
- Affective
- Psychomotor
- Each domain contains different levels of learning, arranged from low to high
- Each higher level includes the levels that precede it

Cognitive Domain: Cognitive Process

Taxonomy Revised in 2001

1. Remember: Recall, retain
2. Understand: Comprehend, explain
3. Apply: Use
4. Analyze: Differentiate, organize
5. Evaluate: Judge, critique
6. Create: Generate, construct new idea, knowledge

Examples: Cognitive Domain Learning Objectives

- **List** the events that created the French Revolution. (Remember)
- **State** the meaning of the word “concentration”. (Understand)
- **Differentiate** pre and post causes of renal failure. (Analyze)
- **Evaluate** the results of current research about the correlation between obesity and Type 2 diabetes. (Evaluate)

Try it Out: Cognitive Domain Exercise

1. Describe challenges facing public health professionals planning for 2020.
2. Design a surveillance program for use in your agency.
3. Critique research findings in terms of their usefulness to providing methods to maintain low stress.
4. List three causes of diseases associated with the agricultural industry.
5. Analyze the relational dynamics occurring in communities when there is a shooting in a high school.

Affective Domain

- Receiving: Willing to listen
- Responding: Reacting to
- Valuing: Attaching a “worth”
- Organization: Resolving conflicts between competing values
- Characterization by Value or Value Complex: Part of a lifestyle

Examples: Affective Domain Learning Objectives

- From a list of volunteer activities, **select** three that match personal interests and preferences. (Responding)
- **Explain** the impact of belief systems on compliance with health directives. (Valuing)
- **Integrate** 3 activities that support personal emotional health in to a daily schedule. (Organization)

Try it Out: Affective Domain Exercise

1. Recognize accountability issues & ethical dilemmas in application of advanced life support technology.
2. Select personal heroes from a list of famous public figures.
3. Mentor a colleague new to the field of laboratory science.
4. Select priorities for use of discretionary income.
5. Describe issues of personal responsibility in promoting primary & secondary prevention in order to effect social change.

Psychomotor Domain

- Perception: Obtain cues
- Set: Readiness to act
- Guided Response: Imitation, trial and error
- Mechanism: Some confidence in doing
- Complex Overt Response: Proficient
- Adaptation: Modify for the situation
- Origination: Create new patterns of movement

Examples: Psychomotor Domain Learning Objectives

- **Identify** the correct meter for a waltz. (Perception).
- **Display** correct positioning of feet for addressing the tee. (Guided Response)
- **Modify** strength at which volleyball is hit based on location of opponents. (Adaptation)
- **Compose** a sonata. (Origination)

Try it Out: Psychomotor Domain Exercise

1. Demonstrate the ability to make chocolate chip cookies without a recipe.
2. Gather materials needed to weed a garden.
3. Alter your responses to requests for information based on the assessed stress level of the client.
4. Create an arrangement of common folk music for performance by a string quartet.
5. Distinguish among the needs of cats based on their meow.
6. Using a template provided by conference organizers, write a letter to the editor to inform the community of an upcoming event.
7. Demonstrate the ability to perform a square dance as part of a group of performers.

Examining the Specimen

- Identifying the level of skill development targeted by the training

Council on Linkages: Aware

- Basic level of mastery
- Can identify the concept or skill
- Have limited ability to perform the skill

Council on Linkages: Knowledgeable

- Intermediate level of mastery of the competency
- Can apply and describe the skill

Council on Linkages: Proficient/Advanced

- Advanced level of mastery
- Able to synthesize, critique or teach the skill to others

Skill Level & Competency

- CDC Competencies: Public health workers need to be competent
- Per del Bueno, Lucia and Lepsinger:

Competency requires the ability to **apply** KSAs

Skill Level & Competency

- Knowledgeable: Intermediate level of mastery; can apply and describe
- Proficient: "Advanced level of mastery of the competency; individuals are able to synthesize, critique or teach the skill."

Classifying the Specimen

- Domains of Learning arranged from simple to complex
  - i.e. It is a higher level of learning to be able to evaluate than remember
- COL skill levels arranged from less skilled to higher skilled
  - i.e. Training at the Awareness Level is less skilled than Proficient/Advanced level training

	Aware	Knowledgeable	Proficient/ Advanced
Cognitive	Remember Understand	Apply Analyze	Evaluate Create
Affective	Receive	Respond Valuing	Organization Value Complex
Psychomotor	Perception Set Guided Response	Mechanism Complex Overt Response	Adaptation Origination

Univ. of Minnesota Midwest Center for Life-Long-Learning in Public Health
Mary Hoeppner
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What We Know

- BT/ER competencies are built on the core Public Health competencies
- Cross-cutting BT/ER competencies (1-9) are for every person who is PH responder
- The language of learning objectives can be correlated to the level of skill we want to develop

Evaluating Competency: Use of Indicators

- Discrete items that reflect KSAs that are related to the desired competency
- Develop through research
- Write in behavioral terms
- Use to evaluate progress toward "competency", we measure the indicators

Example: How quickly aspirin is given to patients who are suspected of having a heart attack

Cross-cutting BT/ER Indicators

- Identify the modes of transmission for all biological agents of concern
- Demonstrate the ability to correctly use PPE
- Communicate directions in a clear and concise manner.
- Recognize signs of post traumatic stress in the behavior of yourself and/or colleagues following an event.

Laboratory Science/Pathology: Role Specific Indicators

- Describe how to arrange for transport of a specimen.
- Correlate type of specimen to appropriate level of laboratory required for specimen receipt and analysis.
- Describe procedures used to rapidly analyze suspected biological or chemical agents.
- Identify precautions to be taken for autopsy when bioterrorism is suspected.

What the Future Looks Like

- Expect performance measurement requirements to link to capacity
- Consider how to develop and use behavioral indicators to measure progress toward competency
- Use sound educational design principles to create competency-based training for the public health workforce